

ABSTRACT OF THE DISCLOSURE

There is provided an electrolytic processing apparatus and method that can improve the flatness of a plated film on a substrate even when fine grooves and large grooves are co-present in the surface of the substrate, enabling a later CMP processing to be carried out in a short time while preventing dishing during the CMP processing. An electrolytic processing apparatus according to an embodiment of the present invention includes: a substrate holder for holding a substrate; a first electrode to make contact with the substrate for passing electricity to a processing surface of the substrate; an electrode head including a high resistance structure and a second electrode, disposed opposite to and in this order from the substrate holder, and a polishing surface facing the processing surface of the substrate held by the substrate holder; an electrolytic solution injection portion for injecting an electrolytic solution between the processing surface of the substrate held by the substrate holder and the second electrode; a relative movement mechanism for moving the substrate holder and the electrode head relative to each other; a press mechanism for pressing the polishing surface of the electrode head against the substrate held by the substrate holder; and a power source for applying a voltage between the first electrode and the second electrode, the power source being capable of selectively switching the direction of electric current.